Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharmacy Sem-II Remedial Examination September 2009

Subject code: 220006   **Subject Name: Physical Pharmacy**
Date:11/09/2009   **Time: 10:30am- 1:30pm**
                                                              Total Marks: 80

Instructions:
1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	(a)	Define Suspensions and differentiate between flocculated and deflocculated suspensions.	04
	(b)	Explain the theory behind Stability of Emulsions.	06
	(c)	Explain any 2 kinetic properties of Colloids.	06
Q.2	(a)	Define Viscosity. Classify viscosity with suitable examples.	04
	(b)	Explain Non Newtonian fluids with examples.	06
	(c)	Explain any one single point and multipoint viscometer with advantages and disadvantages.	06
Q.3	(a)	Explain any two binding forces between molecules.	04
	(b)	Describe in brief Phase rule with an example for one component system and two component system.	06
	(c)	Explain 2 component system in liquid phases with suitable examples for UCT and LCT and eutectic mixtures.	06
Q.4	(a)	Define Micromeritics. What are the different methods in determining particle size? Explain any two methods in detail with necessary equations.	06
	(b)	Explain two methods in determining particle surface area in detail with necessary equations.	04
	(c)	Name the two fundamental properties of powders. Explain the application of derived properties of powders in Pharmacy.	06
Q.5	(a)	What is the importance of buffers in Pharmaceutical and biologic systems?	06
	(b)	Explain and derive buffer equation.	04
	(c)	What are buffered isotonic solutions? Explain Class I method for adjusting tonicity and pH.	06
Q. 6	(a)	Differentiate between a saturated and supersaturated solution. Explain the solute solvent interactions for polar and nonpolar solvents.	06
	(b)	Explain the effect of pressure, temperature and chemical reaction for solubility of gasses in liquids.	05
	(c)	Differentiate between ideal and real solutions. Explain the influence of foreign substances in solubility of liquids in liquids	05
Q.7	(a)	Define Surface tension and Interfacial tension. Explain the wire frame apparatus and its implication.	05
	(b)	Explain Capillary rise method in determining Surface tension with necessary equations.	05
	(c)	Write about the nernst and zeta potential and give its importance in pharmaceutical systems.	06

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